

HEADQUARTERS
EIGHTH UNITED STATES ARMY
APO SAN FRANCISCO 96301-0009

EUSA Supplement 1
to AR 385-11

6 November 1990

Safety
IONIZING RADIATION PROTECTION
(Licensing, Control, Transportation, Disposal, and Radiation Safety)

SUPPLEMENTATION. Issue of further supplementation to this regulation by subordinate commands is prohibited unless prior approval is obtained from HQ EUSA, ATTN: DJ-MS-M, APO 96301-0009. Commanders may extract information from this supplement for use in local standing operating procedures (SOPs).

AR 385-11, 1 May 1980, is supplemented as follows:

Page iii, Contents. Add the following:

APPENDIXES	<u>PAGE</u>
A. Required Publications	A-1
B. Disposal of Radioactive Waste	B-1

Page 1-1, Paragraph 1-1, Purpose. Add the following:

This supplement complies with host nation requirements and prescribes policies for licensing, control, transportation, disposal, and radiation safety within United States Forces, Korea/Eighth United States Army (USFK/EUSA).

Page 1-1, Paragraph 1-2, Applicability. Add subparagraph a(4) after a(3):

(4) USFK units, EUSA MSCs, tenant activities, and U.S. Government contractors.

Page 1-4, Paragraph 1-17, Major Army commands. Add the following to subparagraph a:

The Assistant Chief of Staff (ACofS), J4, Materiel Support Division, Maintenance Branch (DJ-MS-M), APO 96301-0010, is designated as the USEK/EUSA RMCP. The ACofS, J4 will establish a USFK/EUSA Ionizing Radiation Control Committee (IRCC) and conduct quarterly committee meetings.

Page 1-4, Paragraph 1-17, Major Army commands. Add the following to subparagraph c:

For items listed in table 3-1, commercial equivalent devices, and other sources required by Title 10, CFR, two copies of the leak test results will be sent to the USFK/EUSA RMCP. The USFK/EUSA RCO will forward the results to the appropriate United States Army Materiel Command (AMC) MSCs.

***This supplement supersedes EUSA Supplement 1 to AR 385-11, 14 January 1985.**

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Page 1-4, Paragraph 1-17, Major Army commands. Add the following to subparagraph e:

To avoid duplication and the excessive requirement for each geographic area commander to have emergency response teams, the following applies:

(1) For Areas II, III, V, VI, and VII credible radioactive material emergencies will be handled by the Radiation Accident Incident Response and Assistance (RAIRA) Team assigned to the 19th Support Command (SUPCOM). The 2d Infantry Division (2ID) RAIRA Team will respond to emergency incidents within Area I. 19th SUPCOM and 2ID RAIRA Teams will provide backup support for other areas. U.S. Air Forces, Korea (USAFK), will respond to emergency incidents in Areas IV and VIII. Teams will be staffed, trained, and equipped to handle possible emergency situations within their respective areas. Area/local RPOs will determine the team composition/configuration, equipment requirements, and level of training required based on radioactive materials within their jurisdiction. Area commanders (as designated in USFK Reg 10-2) will appoint a primary and alternate local radiation protection officer (LRPO). Emergency plans will be exercised at least annually. AR 385-11 is the authority to purchase equipment and supplies necessary to maintain the RAIRA Team. As a minimum, the team will be configured as indicated below.

(a) Personnel. (Pregnant females may not serve as RAIRA team members.)

- 1 Officer
- 1 NCO, E-6 or above
- 4 Enlisted members

(b) Equipment. (Radiac meters must be calibrated as active in accordance with (IAW) TB 9-6665-285-15.)

- 1 Cargo truck
- 1 AN/PDR-27 or equivalent
- 1 AN/PDR-56 or equivalent
- 1 Portable FM radio

(c) Expendable Supplies. Area/local RPOs will determine additional supplies and equipment requirements based on source material in their respective areas.

- 2 each 30-gallon drums
- 2 rolls Engineering tape
- 4 rolls Masking tape, 2"
- 2 boxes Disposable gloves
- 10 pairs Coveralls
- 10 bars Hand soap

(d) Publications. Appendix A contains a list of publications that must be maintained by units that use, receive, transport, maintain, or dispose of radioactive material.

(2) Anyone knowing of a radiation incident must notify the LRPO, who will promptly notify, through command channels, the USFK/EUSA RCO or Command Center (CC) Seoul. The USFK/EUSA RCO or CC Seoul will determine the extent of response required and will then notify the appropriate agency. After duty hours, CC Seoul will notify the J4 Staff Duty Officer (SDO).

USFK/EUSA RCO/RPO
CC Seoul
USFK Joint Police Information Center

723-6109
723-3030/8282
738-8070

(3) Annually (in January), the EUSA RMCP will provide source inventories, by location, with updates and changes as required, to the area RPOs and respective command RAIRA Teams. Area/local RPOs must inform the USFK/EUSA RMCP of any changes in the radioactive source inventory by 15 February.

Page 1-4, Paragraph 1-18, Major field commands. Insert the following after the paragraph title:

The term “major field command” applies to USFK units, EUSA MSCs, and tenant activities. The EUSA RPO is located in the ACofS, J4, Materiel Support Division, Maintenance Branch (DJ-MS-M.)

Page 1-4, Paragraph 1-19, Major overseas commands. Add the following to subparagraph b:

To avoid duplication of resources, the 2d Maintenance Company (TMDE), 74th Maintenance Battalion (TMDE), Camp Carroll, APO 96460-0286, will operate the USFK/EUSA Radioactive Material Processing Facility (RMPF) for all USFK/EUSA units and activities. The RMPF will not accept radioactive waste from sources other than active U.S. military installations; the RMPF will maintain an inventory of materials received.

(1) To accurately bill other U.S. services for disposal costs, the final disposal request must include the service agency from which the material was received. The 74th Maintenance Battalion will establish contingency plans for wartime destruction/evacuation of radioactive calibration sources.

(2) Only the 2d Maintenance Company will ship radioactive waste or items containing a radioactive element to disposal sites (see appendix B).

Page 1-4, Paragraph 1-19, Major overseas commands. Add the following to subparagraph c:

All radioactive waste shipments will be coordinated with USFK/EUSA RMCP before movement. Commands possessing radioactive material must have personnel trained to transport and escort radioactive waste. The USFK/EUSA RCO will determine when escorts are required and will provide special training upon request.

Page 1-5, Paragraph 1-20, Local commands. Add the following to subparagraph c.

Units requesting licenses, authorization, or permits for use of radioactive materials must submit the signed application to the USFK/EUSA RMGP.

Page 1-5, Paragraph 1-20, Local commands. Add the following to subparagraph d:

(1) Within 15 days of appointment, a copy of the appointing memorandum for all RPOs, LRPOs, and alternate RPOs will be submitted to USFK/EUSA RMCP, ACofS, J4, ATTN: DJ-MS-M, APO 96301-0010. Qualification documentation (radiation safety/nuclear, biological, chemical (NBC) training certificate) will be attached. Units will notify the USFK/EUSA RMCP of periods when qualified RPOs are not available.

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(2) The Commander, 19th SUPCOM, will establish a local IRCC. Minutes of all IRCC meetings will be provided to the USFK/EUSA RMCP. Subordinate elements may establish IRCCs. Meetings will be held at least once each quarter. The term "quarter" is defined as between 12 and 14 consecutive weeks.

(3) A copy of all radiation safety SOPs and local regulations will be submitted to the USFK/EUSA RMCP for review by the USFK/EUSA IRCC within 30 days of publication. The USFK/EUSA RMCP will maintain a file copy. Local SOPs must be reviewed and approved by the local RPO and the USFK/EUSA RMPC. Replacement RPOs must review and approve existing SOPs on assumption of duties.

Page 1-5, Subparagraph 1-20f, Local commands. Insert the following after the first sentence:

The USFK/EUSA RMCP will coordinate with the U.S. Embassy on violations of Korean Atomic Energy laws.

Page 1-5, Paragraph 1-20, Local commands. Add the follow to subparagraph g:

(1) All non-U.S. Army agencies and contractors desiring to use, transport, handle, maintain, or dispose of radioactive materials on U.S. Army-leased or -owned property; transport radioactive materials in U.S. Army registered vehicles; or utilize personnel under U.S. Army jurisdiction (Department of the Army civilian, U.S. military, and KATUSA personnel), will meet the requirements of AR 385-11 and this supplement.

(2) USAFK radiation safety programs will function independent of the USFK/EUSA program. The following exceptions apply:

(a) USAFK activities will provide USFK/EUSA RMCP a current copy of the points of contact for the USAF radiation safety program or appointment orders of RPOs serving in Korea within 30 days of appointment or when there is any change of USAF RPOs.

(b) The USAFK RPO will notify the USFK/EUSA RMCP if an incident involving radioactive materials occurs within their jurisdiction. Emergency response to radiation incidents in Areas IV and VIII are assigned to USAF area commanders.

(c) The USAFK RPO will be a permanent member of USFK/EUSA IRCC.

(d) An inventory of all radioactive materials and radiation-producing devices will be sent to the USFK/EUSA RMCP at least annually, or when changes occur.

Page 1-5, Paragraph 1-20, Local commands. Add the following to subparagraph h:

A copy of all radiation source inventories will be sent to USFK/EUSA RMCP. The inventory must include the information shown in paragraphs 2-11 and 3-5. The inventory includes X-ray, laser, ionizing and non-ionizing radiation devices.

Page 1-5, Paragraph 1-21, Point of origin commander. Add the following to subparagraph b:

The 6th Support Center, 19th SUPCOM, will request disposition instructions from the respective National Inventory Control Point (NICP) for shipments of all radioactive items destined for locations outside Korea. All radioactive waste shipments will be processed by the RPO, 2d Maintenance Company (TMDE), 74th Maintenance Battalion, Camp Carroll, APO 96460-0119 (see TM 55-315).

Page 1-5, Paragraph 1-21, Point of origin commander. Add the following to subparagraph f.

(1) Before loading, all highway vehicles used for radioactive materials will be thoroughly inspected. Vehicles must conform to the provisions of DD Form 626 (Motor Vehicle Inspection).

(2) To ensure compliance with 49 CFR 397, the driver of each motor vehicle will be furnished with a properly executed DD Form 836 (Special Instructions for Motor Vehicle Drivers).

The proponent of this supplement is the Assistant Chief of Staff, J4. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the Commander, EUSA, ATTN: DJ-M-S, APO 96301-0009.

FOR THE COMMANDER:

OFFICIAL:

JAMES R. TAYLOR
Major General, USA
Chief of Staff

///ORIGINAL SIGNED BY///

TRACEY E. TINSLEY
Captain, AG
Assistant Adjutant General

2 Appendixes
A. Required Publications
B. Disposal of Radioactive Waste

DISTRIBUTION:

A

SPECIAL DISTRIBUTION:

5 - CDR, US Army Materiel Command,
ATTN: AMCSF-P, 5001 Eisenhower Ave.,
Alexandria, VA 22333
25 - CDR, 2d Maint Co (ATTN: AMXTM-PO),
APO 96460-0119
50 - DJ-MS-M

APPENDIX A

REQUIRED PUBLICATIONS

A-1. The following publications must be maintained by units and NBC personnel that use, receive, transport, maintain, or dispose of radioactive material. Other publications listed are required based on the type and quantity of source material on hand.

AR 40-14 (Control and Recording Procedures for Exposure to Ionizing Radiation and Radioactive Materials).

AR 385-10 (The Army Safety Program).

AR 385-30 (Safety Color Code Markings and Signs).

AR 385-40 (Accident Reporting and Records).

AR 700-64 (Radioactive Commodities in the DOD Supply Systems).

AR 710-3 (Asset and Transaction Reporting System).

FM 3-5 (NBC Decontamination).

TB 9-6665-285-15 (Calibration Program for Radiac Meters).

TM 11-6665-361-10 (Operators Manual for Radioactive Test Sample, Krypton 85, Gamma, MX-7338/PDR-27).

TM 55-315 (Transportability Guidance for Safe Transport of Radioactive Materials).

A-2. The following publications may be required, based on the type and quantity of source material on hand.

AR 15-1 (Committee Management).

AR 20-1 (Inspector General Activities and Procedures).

AR 25-55 (The Department of the Army Freedom of Information Act Program).

AR 40-5 (Preventive Medicine).

AR 95-27 (Operational Procedures for Aircraft Carrying Hazardous Materials).

AR 200-2 (Environmental Effects of Army Actions).

AR 335-15 (Management Information Control System).

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AR 420-90 (Fire Protection).

Code of Federal Regulations (CFR), Titles 10, 29, 40, and 49.

Department of the Army Radiation Authorization/Permit (when applicable).

SB 11-206 (Film Badge (Dosimeter) Supply and Service for Technical Radiation Exposure Control).

TB 9-1300-278 (Guidelines for Safe Response to Handling, Storage, and Transportation Accidents Involving Army Tank Munitions Which Contain Depleted Uranium).

TB 43-0141 (Safe Handling, Maintenance, Storage, and Disposal of Radioactive Commodities Managed by the US Army Troop Support and Aviation Materiel Readiness Command (Excluding Aircraft Components)).

TB 43-0197 (Instructions for Safe Handling, Maintenance, Storage, and Disposal of Radioactive Items Managed by US Army Armament Materiel Command).

TB 385-4 (Safety Precautions for Maintenance of Electrical/Electronic Equipment).

TB Med 265 (Aerospace Medicine; Threshold Limit Values for Toxic Chemicals and Certain Electromagnetic Radiations).

TB Med 522 (Occupational and Environmental Health: Control of Health Hazards C, from Protective Material Used in Self-Luminous Devices).

TM 3-261 (Handling and Disposal of Unwanted Radioactive Material).

TM 9-1290-200-14&P (Operator's, Unit, Intermediate Direct Support, and Intermediate General Support Maintenance Manual).

TM 11-6665-209-10 (Operator's Manual For Radiac Sets, AN/PDR-27J).

TM 11-6665-227-12 (Operator's and Organizational Maintenance Manual: Calibrator Set, Radiac, AN/UDM-2).

TM 38-250 (Packaging and Materials Handling: Preparing of Hazardous Materials for Military Air Shipment).

USFK Reg 550-8 (Contingency Planning for Response to Disasters Affecting United States Installations and Personnel).

APPENDIX B

DISPOSAL OF RADIOACTIVE WASTE

B-1. GENERAL.

a. This appendix gives guidelines for packaging, marking, and shipping surplus and unserviceable radioactive material or contaminated items designated for disposal. Commanders of units generating or handling radioactive waste material must establish procedures to ensure the protection and safety of personnel and the proper handling of material during storage or shipment.

b. Disposal by internment in the continental United States (CONUS) is the only authorized method for disposal of radioactive waste in this command. Only with written authorization from HQ U.S. Army Armament, Munitions, and Chemical Command (AMCCON) will USFK/EUSA ship waste to CONUS, or dispose of material through third parties.

B-2. EXCEPTION. Special cases not covered by this appendix will be referred to the appropriate RPO or to the USFK/EUSA RCO.

B-3. PRELIMINARY SCREENING.

a. The volume of waste material generated in USFK/EUSA will be kept to a minimum. Every effort will be made to minimize and reduce contamination to acceptable limits. Efforts will be taken to isolate contamination by single radioisotope into separate drums (for example, work on different items requires separate waste containers). Drums will be labeled IAW TM 3-261 and AR 385-30.

b. Items may be disposed of through Defense Reutilization and Marketing Office (DRMO) channels or as trash if they can be decontaminated. To prevent dose rate buildup or further contamination, items in this category must be disposed of as they are generated. They will not be accumulated; however, if accumulation is necessary, then the remaining provisions of this subparagraph apply. (See paragraph 5-8 of the basic regulation for items that must be disposed of as radioactive waste.) Items for disposal must meet the following standards:

(1) For beta-gamma contamination: Less than 0.5 millirad per hour at the surface.

(2) For alpha contamination: Fewer than 200 counts per minute.

c. Whenever possible, radioactive waste material will be segregated by radioisotope into the following categories before shipment:

(1) Solid.

(a) Combustible.

(b) Noncombustible.

(2) Liquid.

(3) Gaseous.

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B-4. PACKAGING.

a. Radioactive waste material will be packaged in secure, weather tight containers. Removable tops, welded seam, steel drums meeting military specification MIL-D-6054 are the recommended containers. The container should not exceed 37 gallons (approximately 4.9 cubic feet). The smallest dimension should not be less than 4 inches. Material must be packed as tightly as possible in the container. The lid must be securely fastened and sealed to prevent scattering of contents if the container is dropped. The container must be designed so that no leakage of the contents occurs, even under the most diverse conditions encountered during handling, shipment and storage. The container must be placed and secured on pallets.

b. Material must be packaged to ensure there is no contamination (determined by a smear test) on the exterior of the container. Possible contamination is determined by wiping the container and using the appropriate radiac instrument to measure the contamination level of the swipe. The swipe will be measured at a location far enough from the container to permit a valid reading. If radiac instruments are not available, the swipe may be sent to the RMPF, Camp Carroll, for analysis.

c. Gamma radiation for any one package or container may not exceed 0.5 millirad per hour at the container surface. Shielding must be sufficient to prevent the penetration of any primary alpha and beta radiation to the package surface.

d. Packaging of unserviceable, excess, and unsafe radioactive electron tubes will be IAW the following Instructions:

(1) Electron tubes may be packed in their original containers, or in wood, fiber or paper boxes, steel drums, or other approved storage containers. Shielding will be used to limit the radiation level to that specified in subparagraph c above.

(2) Electron tubes will be packed so that any leakage of radioactive material will be absorbed and confined in the shipping container. Packed tubes will be enclosed in sealed barrier-wrap material, military specification B-131, or equivalent.

e. Radioactive luminous markers will be packaged in their original containers. Shielding will be used to limit the radiation level to that specified in subparagraph c above. Luminous markers known, or suspected to be damaged will be packaged in a sealed metal container.

f. Liquid radioactive waste material will be packed in tight glass, earthenware, or other suitable interior containers. The interior of these containers must be surrounded on all sides by material that will absorb twice the amount of the liquid contents. The material must be of such a quality that its efficiency will not be impaired by chemical reaction with the contents. When shielding is necessary, absorbent cushioning must be placed inside the shield.

g. At the direction of the RPO, protective clothing (rubber gloves, aprons, eye protection), will be worn when handling waste. Protective clothing will be marked IAW MIL-STD-129. Protective clothing worn while handling radioactive waste will be considered contaminated and must be handled and disposed of properly.

B-5. LABELING. Packages will be marked as radioactive with the appropriate label or as specified by the RMCP. Cabinets, rooms, and containers will be marked with EA Label 33EK (CAUTION - Radioactive Materials).

B-6. DOCUMENTATION. Activities directing shipment of radioactive waste to a processing or storage facility will use DD Form 1348-1 (DOD Single Line Item Release/Receipt Document). The original copy will accompany all radioactive waste shipments.

B-7 SHIPMENT. All USFK/BJSA units and organizations are authorized to ship radioactive waste to the USFK/EUSA RMPF or other storage sites designated by the RMCP. All shipments must be coordinated through the area/local RPO.

a. Waste generated in Korea will be consolidated at the USEK/BJSA RMPF, which is operated by Commander, 2d Maintenance Company (TMDE), 74th Maintenance Battalion.

b. Shipments sent to the processing facility will be addressed to the Commander, 2d Maintenance Company (TMDE), 74th Maintenance Battalion, ATTN: RADIAC, APO 96460-0119.

c. The delivery schedule will be coordinated by telephone or in writing with the area/local RPO, the USFK/EUSA RCO, and the RMPF RPO.

d. Transportation to the collection site or disposal facility will be by U.S. vehicle or aircraft. If an overnight stop must be made enroute, the stopover will be on a U.S. military installation and the material will be properly safeguarded. For aircraft shipments, the requirements of AR 95-27 and TM 38-250 apply. The commander originating the shipment is responsible for notifying the destination airfield.

e. The RPO will ensure that shipments are accompanied by escort personnel who are equipped with and trained in the use of dosimeters, radiac meters, radiological contamination markers, and emergency notification procedures.

f. The radiation level of the driver (pilot) and passenger locations must not exceed 0.2 millirad per hour. Shipments will adhere to provisions of TM 38-250, TM 55-315, AR 385-11, AR 95-27, and host nation requirements.

g. The container will be secured to the vehicle or aircraft to prevent loss or damage in transit.

h. Containers of radioactive waste will not be loaded into the same vehicle with explosives, subsistence items, photographic film, or flammables.

i. In compliance with AR 40-14, commanders will determine and record dosages incurred by personnel who handle and ship radioactive waste materials.

j. All vehicles will be marked IAW TM 55-315; AR 385-30, chapter 4; MIL-STD-129; and host nation requirements or specific NRC License.

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B-8. ACCIDENTS IN TRANSIT. If the vehicle or aircraft transporting radioactive waste materials is involved in an accident, personnel accompanying the shipment must immediately notify the nearest U.S. Army commander. Personnel must report whether or not contamination has occurred and request assistance if needed. The U.S. Army commander will immediately notify the USFK/EUSA RCO (723-6109). After duty hours, the commander must notify the CCS SDO (723-3030).

B-9. ACTION BY THE RMPF.

a. The EUSA RMPF, Camp Carroll, will receive, inspect, segregate, consolidate, package and provide temporary storage for radioactive waste material and will maintain appropriate records. In performing the functions, appropriate provisions of both U.S. and Republic of Korea regulations will apply. If provisions conflict, the more stringent provision will apply.

b. There are limits to the quantity and size of radioactive waste that can be stored at the RMPF. Requestors must ensure--

(1) Packages and containers are prepared and tested IAW this appendix, or the appropriate standard of Korea. Before acceptance, discrepancies will be reported to the USFK/EUSA RCO.

(2) Dose rate in the storage area does not exceed 100 millirad per hour.

(3) Department of the Army Radiation Authorization (DARA) covers the quantity and nuclide to be accepted. The 2d Maintenance Company will provide the USFK/EUSA RMCP with a copy of all DARAs required in the performance of the unit mission.

d. When an economic quantity of processed waste has been accumulated by the processing facility, the Radioactive Waste Control Officer (RWCO), or RPO of 2d Maintenance Company, will request disposition instructions from HQ AMCCOM through HQ EUSA. HQ AMCCOM and HQ EUSA must approve in-country disposal.

e. Only the RMPF may dispose of individually controlled items. Individually controlled items must be shipped by specific NICP instructions.